Abstract of the Disclosure

APPARATUS AND METHOD FOR PRE-FETCHING DATA TO CACHED MEMORY USING PERSISTENT HISTORICAL PAGE TABLE DATA

A computer system includes a main memory, at least one processor, and at least one level of cache. The system maintains reference history data with respect to each addressable page in memory, preferably in a page table. The reference history data is preferably used to determine which cacheable sub-units of the page should be pre-fetched to the cache. The reference history data is preferably an up or down counter which is incremented if the cacheable sub-unit is loaded into cache and is referenced by the processor, and decremented if the sub-unit is loaded into cache and is not referenced before being cast out. The reference counter thus expresses an approximate likelihood, based on recent history, that the sub-unit will be referenced in the near future.